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# Chapter 18

The International Monetary System,  
1870–1973

# Roadmap



## ■ The International Monetary System

- Internal and External Balance
- Assessing the performance of the Classical Gold Standard
- The Interwar Years, 1918-1939
- The Bretton Woods System and the International Monetary Fund
  - Internal and External Balance Under the Bretton Woods System
  - Analyzing Policy Options Under the Bretton Woods System
- The External Balance Problem of the United States
- Worldwide Inflation and the Transition to Floating

# Macroeconomic Goals

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- “Internal balance” is a name given to the macroeconomic goals of **full employment** (or normal production) and **price stability** (or low inflation).
  - Over-employment tends to lead to increased prices and under-employment tends to lead to decreased prices.
  - Volatile aggregate demand and output tend to create volatile prices.
  - Unexpected inflation redistributes income from creditors to debtors and makes planning for the future more difficult.

# Macroeconomic Goals (cont.)

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- “External balance” is a name given to a current account that is not “too” negative or “too” positive.
  - A large current account *deficit* can make foreigners think that an economy can not repay its debts and therefore make them stop lending, causing a financial crisis.
  - A large current account *surplus* can cause protectionist or other political pressure by foreign governments (e.g., pressure on Japan in the 1980s and China in the 2000s).
  - Deficits due to low saving (US now) versus high investment (Norway in 1970s): we may evaluate these differently.

# Macroeconomic Goals (cont.)

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- “External balance” can also mean a **balance of payments equilibrium**:
  - a current account (plus capital account) that matches the non-reserve financial account in a given period, so that official international reserves do not change.
  - This concept especially important for countries that may suddenly find themselves unable to borrow from foreigners.

# International Macroeconomic Policy

## Under the Gold Standard, 1870-1914



- Under the gold standard every country pegged its currency's price in terms of gold.
- This yields a system of fixed exchange rates among all countries adhering to the gold standard.
- If an ounce of gold costs  $P^{UK}$  pounds in England and  $P^F$  francs in France, then the pound/franc exchange rate must be  $P^{UK}/P^F$  pounds/franc. Or else: arbitrage.
- Hume's symmetric mechanism: UK deficit  $\Rightarrow$  sales of gold for £ (because foreigners are earning more £ than UK earns francs). French gain this gold.
- Gold points: result of gold transport costs.

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- The gold standard from 1870–1914 and (briefly) after the mid-1920s had mechanisms that prevented flows of gold reserves (the balance of payments) from becoming too positive or too negative.
    - Prices tended to adjust according the amount of gold circulating in an economy, which had effects on the flows of goods and services: the current account.
    - Central banks influenced financial capital flows, so that the non-reserve part of the financial account matched the current account, thereby reducing gold outflows or inflows.

# Gold Standard, Revisited (cont.)



- **Price specie flow mechanism** is the adjustment of prices as gold (“specie”) flows into or out of a country, causing an adjustment in the flow of goods.
  - An inflow of gold tends to inflate prices.
  - An outflow of gold tends to deflate prices.
  - If a domestic country has a current account surplus in excess of the non-reserve financial account, gold earned from exports flows into the country—raising prices in that country and lowering prices in foreign countries.
    - **Goods from the domestic country become relatively expensive and goods from foreign countries relatively cheap, reducing the current account surplus of the home country and the deficits of the foreign countries.**
    - **Described in detail by the philosopher David Hume in the 18<sup>th</sup> century.**



# Gold Standard, Revisited (cont.)

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- Thus, price specie flow mechanism of the gold standard could reduce current account surpluses and deficits, achieving a measure of external balance for all countries.

# Gold Standard, Revisited (cont.)

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- The “**Rules of the Game**” under the gold standard refer to another adjustment process that was theoretically carried out by central banks:
  - The selling of domestic assets when gold exits the country to pay for imports. This decreased the money supply and increased interest rates, attracting financial capital inflows to match a current account deficit, reducing gold outflows.
  - The buying of domestic assets when gold enters the country as income from exports. This increased the money supply and decreased interest rates, reducing financial capital inflows to match the current account, reducing gold inflows.

# Gold Standard, Revisited (cont.)

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- The gold standard's record for internal balance was mixed.
  - The US suffered from deflation and depression in the 1870s and 1880s after its adherence to the gold standard: prices (and output) were reduced after inflation during the 1860s.
  - The US unemployment rate averaged 6.8% from 1890–1913, but it averaged under 5.7% from 1946–1992.

# International Macroeconomic Policy Under the Gold Standard, 1870-1914



- The Gold Standard “Rules of the Game”: Myth and Reality
  - Central banks can amplify Hume’s price-specie flow adjustment mechanism by
    - Contracting the money supply further when losing reserves (selling domestic assets)
      - Increases interest rates. Attracts Gold
    - Expanding the money supply when accumulating reserves
      - Lowers interest rates. Gold moves out.
  - In practice, little incentive for countries with expanding gold reserves to follow the rules.
    - Instead, countries often **sterilized** gold inflows.

# International Macroeconomic Policy Under the Gold Standard, 1870-1914

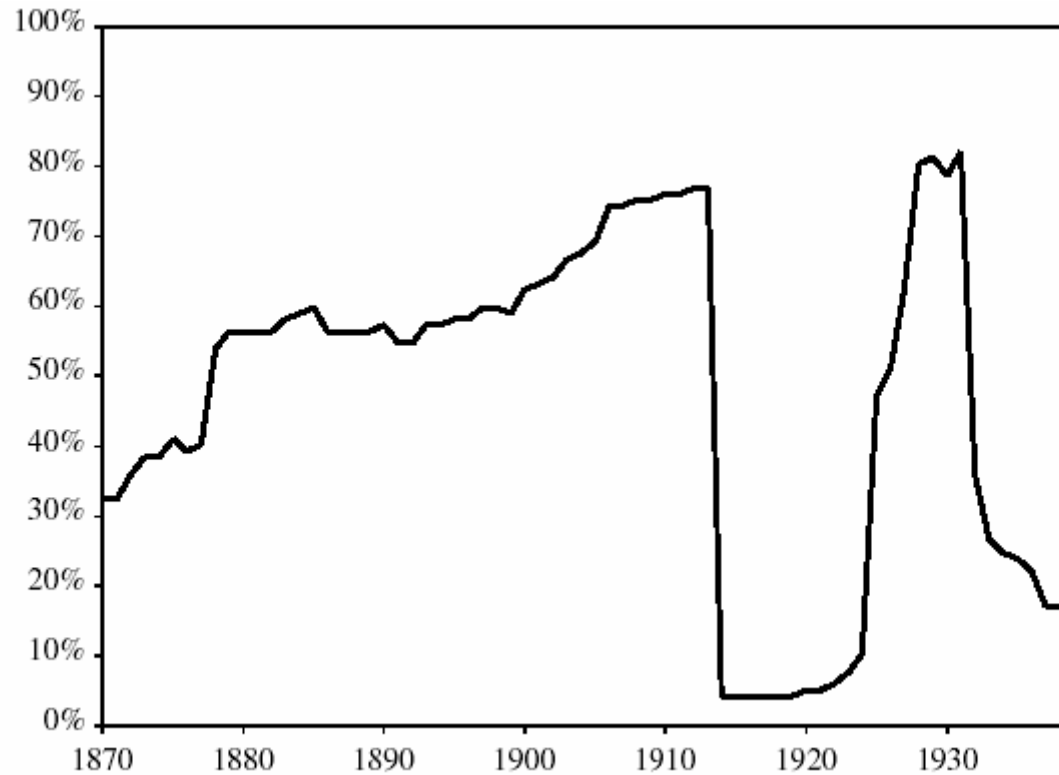
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## ■ Internal Balance Under the Gold Standard

- The gold standard system's performance in maintaining internal balance was mixed.
  - U.S. unemployment rate averaged 6.8% between 1890 and 1913, but it averaged under 5.7% between 1946 and 1992.
  - Subordination to external objective.
  - Fluctuations in world Gold stocks (deflation when Gold is scarce, inflation when abundant)
  - Politically, could work only in the absence of a strong political constituency in favor of internal balance.

# Adherence to Gold, 1870-1939



# The Interwar Years, 1918-1939

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- With the eruption of WWI in 1914, suspension of the gold standard.
  - Interwar years marked by severe economic instability.
  - Reparation payments led to episodes of hyperinflation in Europe.
- **The German Hyperinflation**
  - Germany's price :
    - from a level of **262** in January 1919
    - to **126,160,000,000,000** in December 1923  
(a factor of 481.5 billion).

Economic distress eventually promoted rise of Nazism.

# The Interwar Years, 1918-1939

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- The Fleeting Return to Gold
  - 1919
    - U.S. returned to gold
  - 1922
    - Group of countries (Britain, France, Italy, and Japan) agreed on a program calling for:
      - a general return to the gold standard
      - cooperation among central banks in attaining external and internal objectives.
  - 1925
    - Britain returned to the gold standard **at prewar parity**. Severe unemployment and deflation before, after.



# The Interwar Years, 1918-1939

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## ■ Great Depression

- Initial collapse in 1929 (stock market crash)
- Followed by bank failures throughout the world.
- 1931
  - Britain forced off gold when foreign holders of pounds lost confidence in Britain's commitment to maintain its currency's value. (Keynes: Gold a "barbarous relic.")
  - Japan left too and had a rapid recovery (unlike today).
  - United States devalued in 1933.
  - "Gold bloc" countries (e.g., France, Belgium, Switzerland, Poland) stayed with gold until 1936.

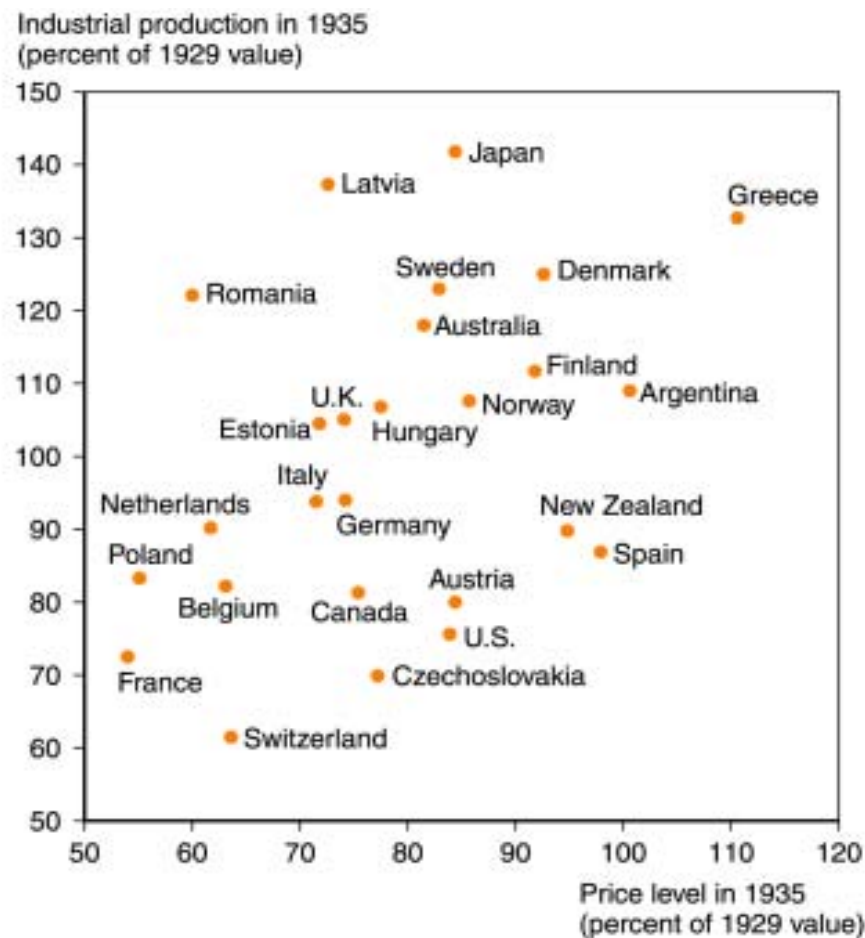
# The Interwar Years, 1918-1939



**Figure 20-2: Industrial Production and Wholesale Price Index Changes, 1929-1935**

Countries such as Australia and the United Kingdom that left the gold standard early and adopted counter-deflationary monetary policies experienced milder declines in output during the Great Depression. Countries such as France and Switzerland that stuck with the gold standard longer had greater declines in price levels and output.

**Source:** Ben Bernanke and Kevin Carey, "Nominal Wage Stickiness and Aggregate Supply in the Great Depression," *Quarterly Journal of Economics* 111 (August 1996), pp. 853-883.



# The Interwar Years, 1918-1939

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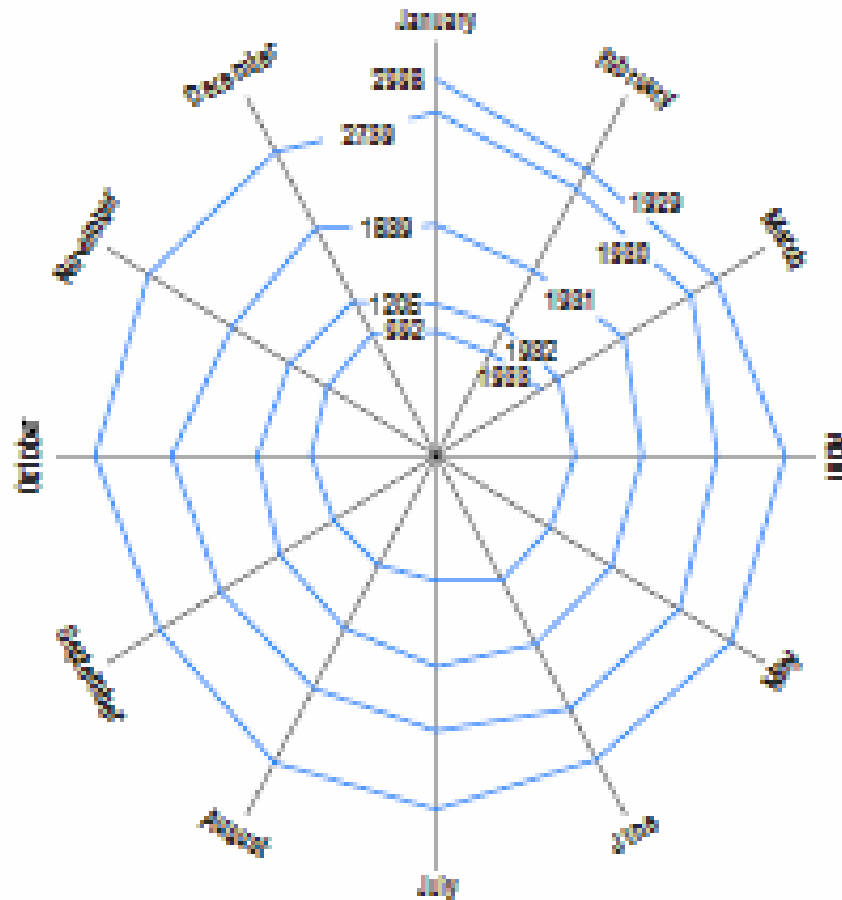


- **International Economic Disintegration**
  - Many countries suffered during the Great Depression.
  - Major economic harm was done by restrictions on international trade and payments.
    - Protectionist policies. Smoot-Hawley tariff in US (1930)
  - **Beggar-thy-neighbor** policies: foreign retaliation and disintegration of the world economy.
  - All countries' situations could have been bettered through international cooperation
    - **Bretton Woods agreement**

# The Interwar Years, 1918-1939



**Figure 20-1: Collapse in World Trade, 1929-1933 (millions of USD)**



Source: Charles P. Kindleberger, *The World in Depression 1929-1933* (revised edition; Berkeley: University of California Press, 1996).

# The Interwar Years: Political Factors

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- Why was it hard to restore the old gold standard?
- Political situation changed radically after WWI.
- Extension of franchise, labor parties.
- Greater demand for government to manage the economy for the general welfare.
- Social protection much more widely accepted – e.g., unemployment insurance, which swelled government budgets.
- Keynesian theories.

# The Bretton Woods System and the International Monetary Fund

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## ■ International Monetary Fund (IMF)

- In July 1944, delegates from 44 countries met in Bretton Woods, New Hampshire to set up a system of fixed exchange rates.
  - All currencies had fixed exchange rates against the U.S. dollar and an unvarying dollar price of gold (**\$35 an ounce**).
  - Each country maintained its parity with USD
  - US maintained parity with Gold.
- It intended to provide lending to countries with current account deficits.
- It called for movement toward currency convertibility on current account (not on capital account).

# The Bretton Woods System and the International Monetary Fund

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## ■ Goals and Structure of the IMF

- The IMF Articles of Agreement tried to incorporate sufficient flexibility to allow countries to attain external balance without sacrificing internal objectives or fixed exchange rates.
- Two major features of the IMF Articles of Agreement helped promote this flexibility in external adjustment:
  - IMF lending facilities (against quota) for **temporary disequilibrium**.
  - **IMF conditionality** is the name for the surveillance over the policies of member countries who are heavy borrowers of Fund resources.
  - Adjustable parities for **fundamental disequilibrium**.

# The Bretton Woods System and the International Monetary Fund

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## ■ Convertibility

### • Convertible currency

– A currency that may be freely exchanged for foreign currencies.

– The U.S. and Canadian dollars became convertible in 1945. A Canadian resident who acquired U.S. dollars could use them to make purchases in the U.S. or could sell them to the Bank of Canada.

– Inconvertibility hampers international trade.

• The IMF articles called for convertibility on **current account** transactions only. (fear of speculative capital flows: “**hot money**”)

• Convertibility restored in 1958 in Europe, 1964 Japan.



# Internal and External Balance Under the Bretton Woods System

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- **The Changing Meaning of External Balance**
  - The “Dollar shortage” period (first decade of the Bretton Woods system)
    - USD becomes a world currency;
    - Main external problem was to acquire enough dollars to finance necessary purchases from the U.S.
    - Current account deficits financed from change in official reserves.
  - Marshall Plan (1948)
    - US Program of dollar grants to European countries. Helped limit the severity of dollar shortage.
  - After convertibility, private capital flows increase.
    - Markets more integrated (with some capital controls)

# Internal and External Balance Under the Bretton Woods System

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- **Speculative Capital Flows and Crises**
  - Current account deficits and surpluses took on added significance under the new conditions of increased private capital mobility.
    - Countries with a large current account deficit might be suspected of being in “fundamental disequilibrium” under the IMF Articles of Agreement.
    - Countries with large current account surpluses might be viewed by the market as candidates for revaluation.
    - Frequent speculative attacks (UK 1964, France, Germany 1969)

# Analyzing Policy Options Under the Bretton Woods System



- Under fixed exchange rates (except US):

$$i = i^*$$

- (Does not hold exactly with capital controls)

- **Maintaining Internal Balance**

- If both  $P^*$  and  $E$  are fixed, internal balance requires full employment.
- Internal balance:

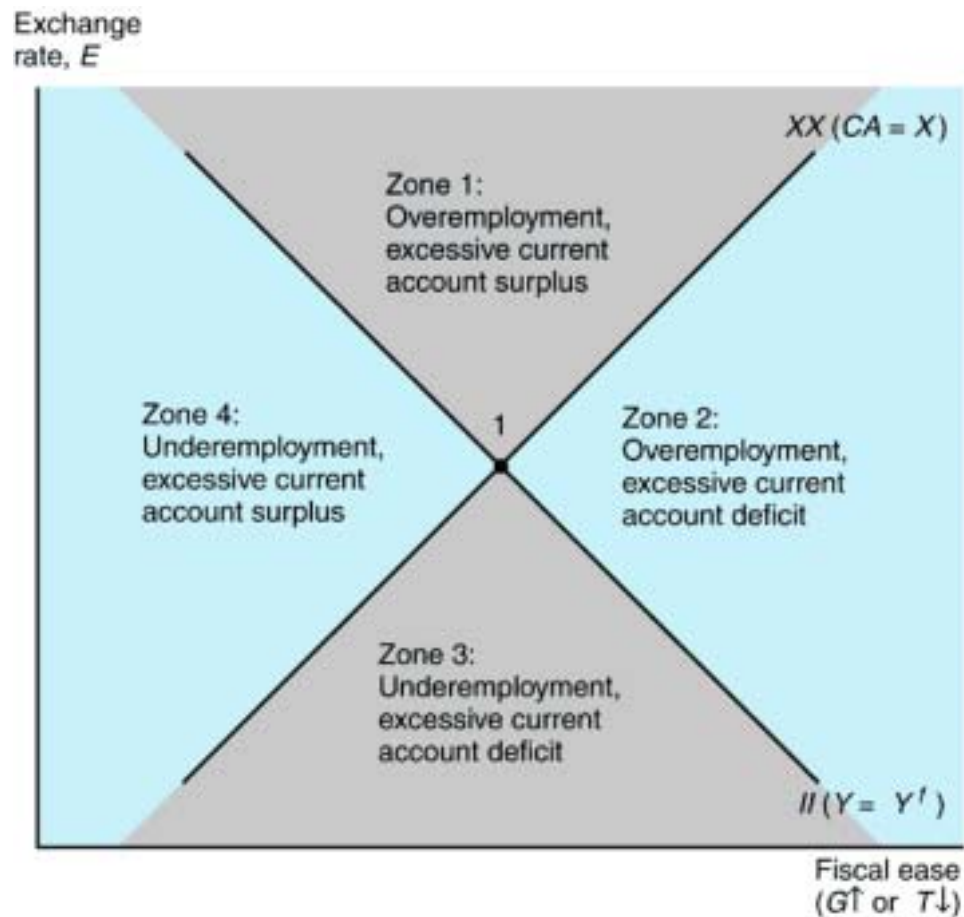
$$Y^f = C(Y^f - T) + I + G + CA(EP^*/P, Y^d, Y^{d*})$$

- Policy tools that affect aggregate demand in the short run:  $T$ ,  $G$ ,  $E$  (devaluation/revaluation)
- If  $E$  depreciates, can run larger budget deficit (small  $G$ )

# Analyzing Policy Options Under the Bretton Woods System



**Figure 20-3:** Internal Balance ( $II$ ), External Balance ( $XX$ ), and the “Four Zones of Economic Discomfort”



# Analyzing Policy Options Under the Bretton Woods System

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- **Maintaining External Balance**
  - How do policy tools affect the economy's external balance?
    - $CA(EP^*/P, Y - T) = \text{target level}$
    - A decrease in taxes (or increase in government expenditures, which raises output,  $Y$ ) will require a devaluation today.

# Analyzing Policy Options Under the Bretton Woods System

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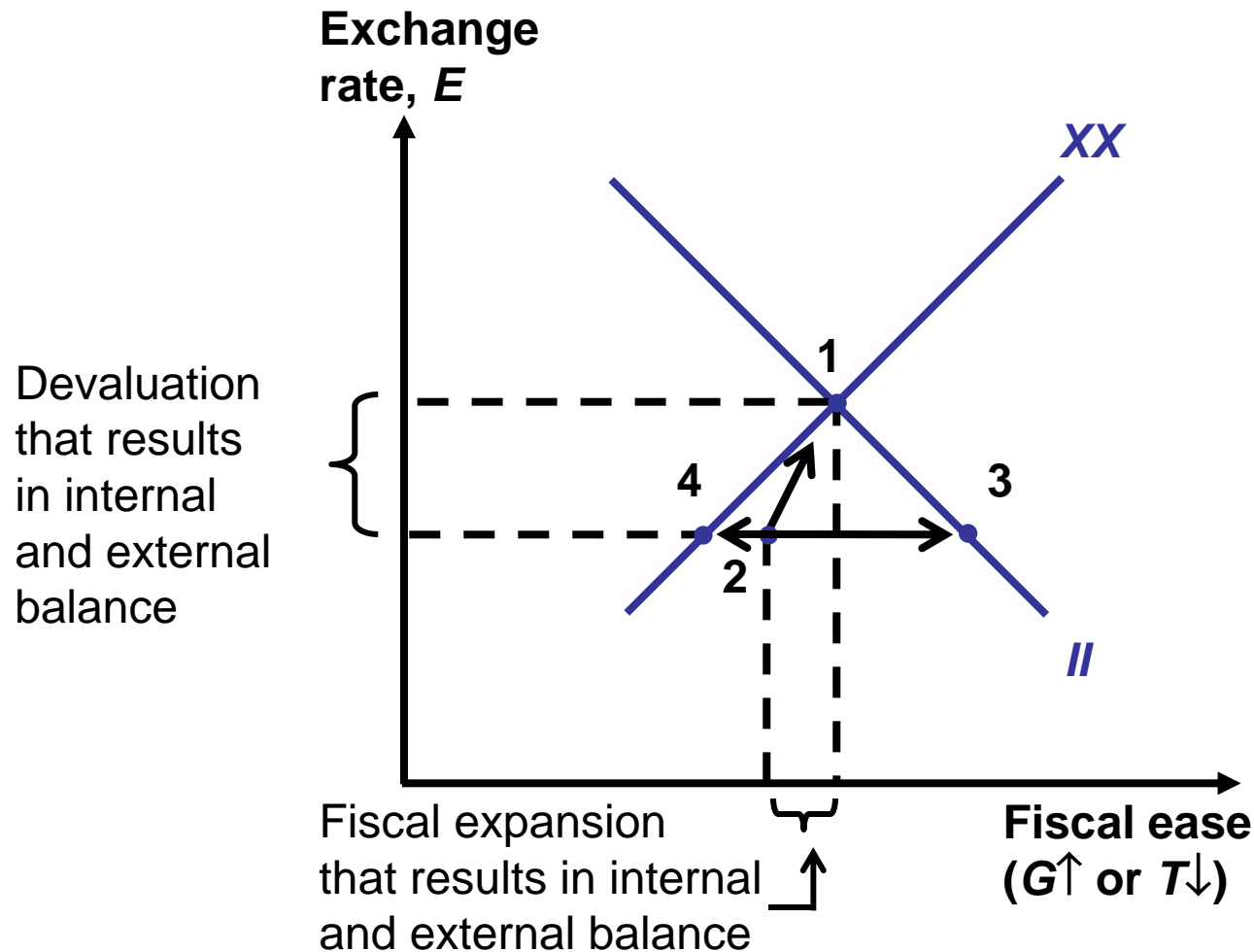


- **Expenditure-Changing and Expenditure-Switching Policies**
  - Policymaker wants to achieve point 1.
  - **Expenditure-changing policy**
    - The change in fiscal policy that moves the economy to Point 1.
    - It alters the level of the economy's total demand for goods and services.
  - **Expenditure-switching policy**
    - The accompanying exchange rate adjustment
    - It changes the direction of demand, shifting it between domestic output and imports.
  - Both expenditure changing and expenditure switching are needed to reach internal and external balance.

# Analyzing Policy Options Under the Bretton Woods System



**Figure 20-4:** Policies to Bring About Internal and External Balance



# The External Balance Problem of the United States

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- U.S. responsible for dollar price of gold at \$35 an ounce and guarantee that foreign central banks could convert their dollar holdings into gold at that price.
  - Foreign central banks were willing to hold on to the dollars they accumulated, since these paid interest and represented an **international money**.
- **The Confidence problem (Triffin)**
  - The foreign holdings of dollars increased until they exceeded U.S. gold reserves and the U.S. could not redeem them.
  - Triffin proposed replacing dollars with SDR.  
(IMF = world central bank)



# The External Balance Problem of the United States

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- **Special Drawing Right (SDR)**
  - An artificial reserve asset
  - SDRs are used in transactions between central banks but had little impact on the functioning of the international monetary system.

# The External Balance Problem of the United States

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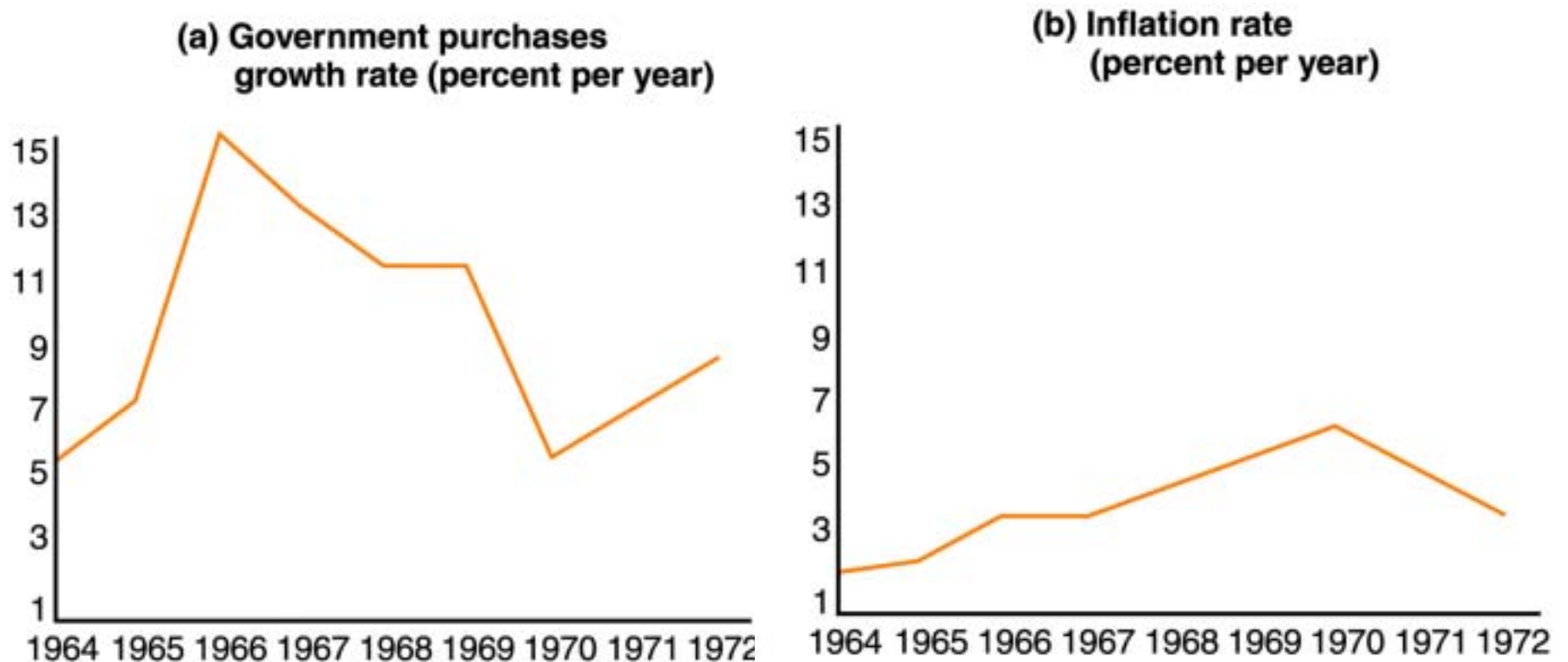
## ■ Decline and Fall of the Bretton Woods System

- After the period of Dollar shortage, and convertibility, growing fears of a USD devaluation.
- Pushed foreign CB to exchange dollars for Gold
- Kennedy adm. tries to stem capital outflows by regulating and taxing capital movements (1963). Euromarkets take off.
- Vietnam war, “Great Society”: budget deficits, inflation and current account deficits
- 1968-69: Federal Reserve decided to relax monetary policy
- 1968: Speculative attack on the dollar-gold link.
  - Tiered market put in place: severs the link between gold reserves and the USD. Simply a system of fixed exchange rates
  - Inflation increases
- Germany floats in 1971 to avoid increasing the money supply
  - August 1971: Devaluation of dollar. Suspension of dollar-gold link
  - March 1973: floating period begins.

# The External Balance Problem of the United States



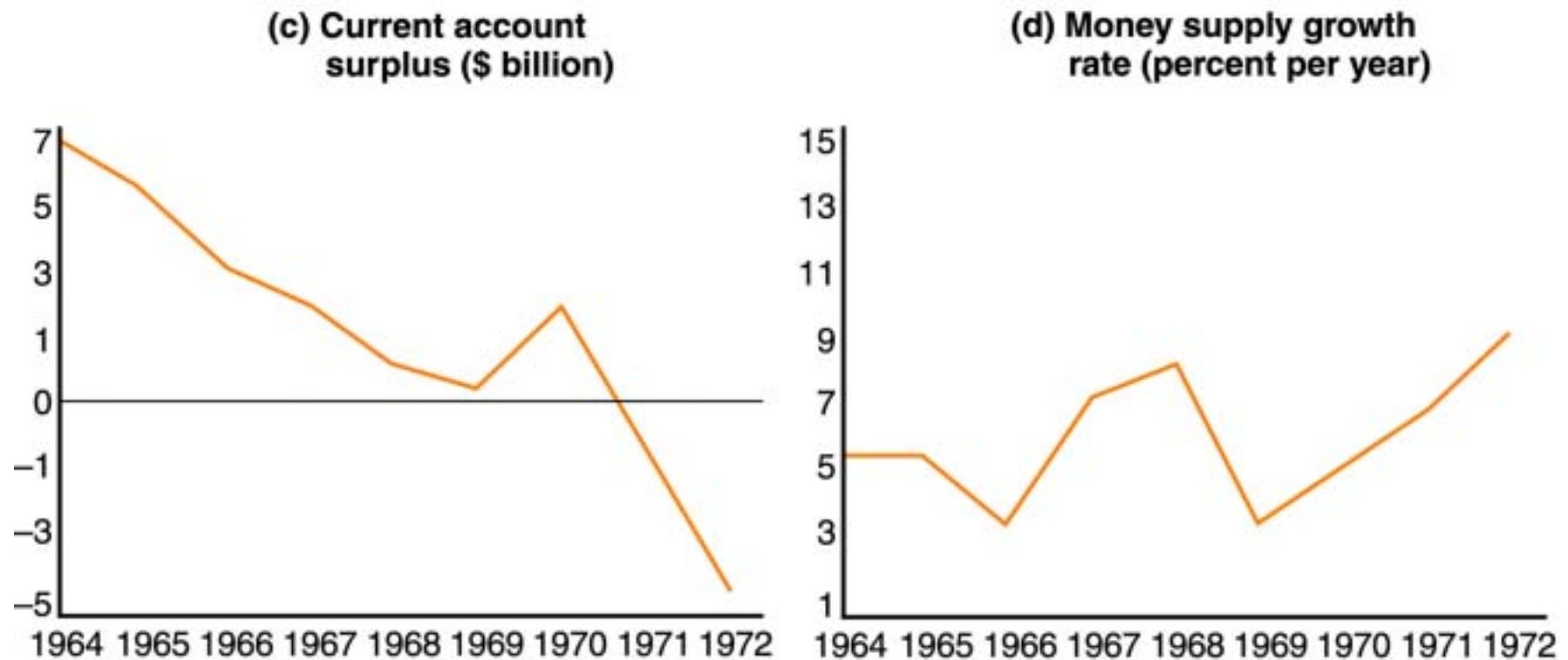
**Figure 20-5: U.S. Macroeconomic Data, 1964-1972**



# The External Balance Problem of the United States



Figure 20-5: Continued



**Source:** *Economic Report of the President, 1985.* Money supply growth rate is the December to December percentage increase in M1. Inflation rate is the percentage increase in each year's average consumer price index over the average consumer price index for the previous year.

# Worldwide Inflation and the Transition to Floating Rates

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- The acceleration of American inflation in the late 1960's was a worldwide phenomenon.
  - It had also speeded up in European economies.
- When the reserve currency country speeds up its monetary growth, one effect is an automatic increase in monetary growth rates and inflation abroad.
- U.S. macroeconomic policies in the late 1960s helped cause the breakdown of the Bretton Woods system by early 1973.

# Worldwide Inflation and the Transition to Floating Rates



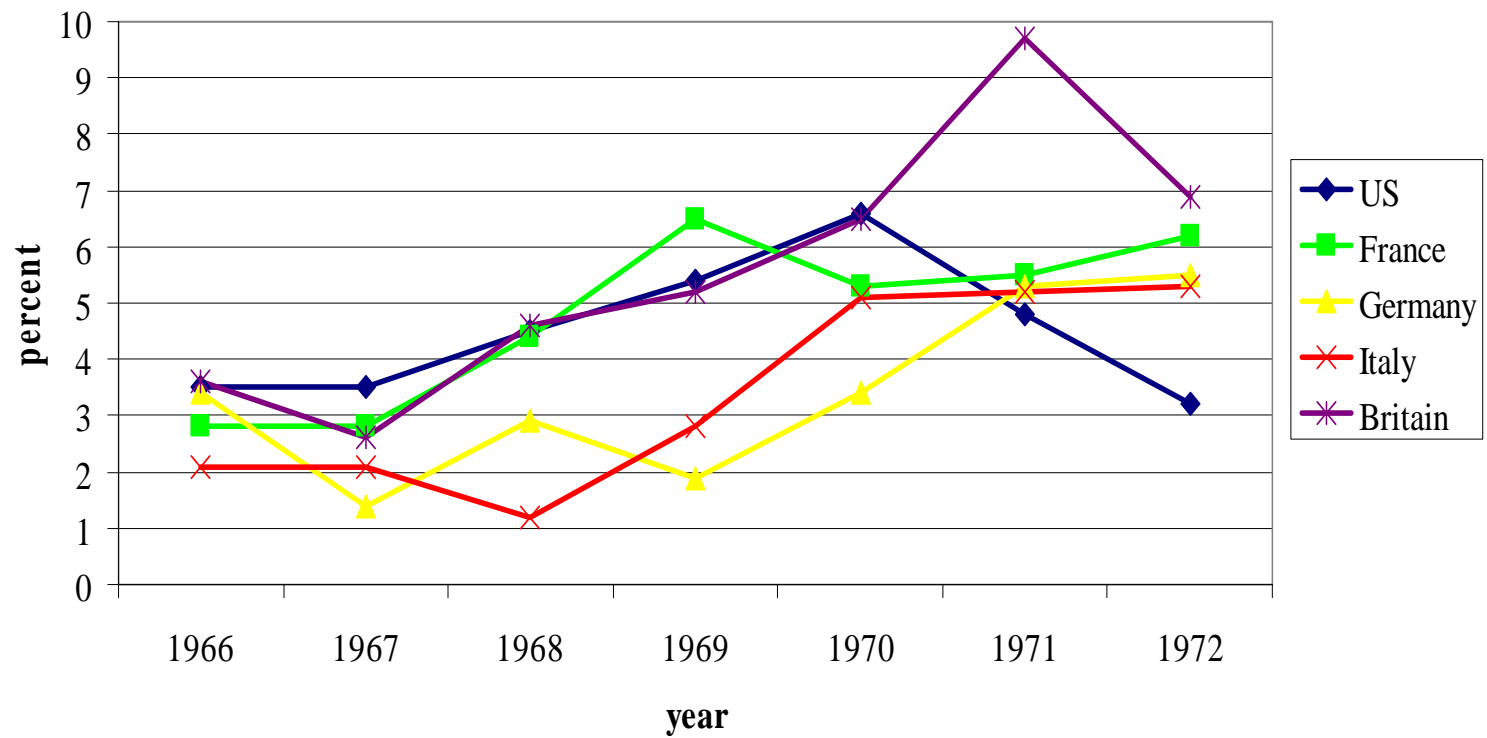
**Table 20-1:** Inflation Rates in European Countries, 1966-1972  
(percent per year)

Country	1966	1967	1968	1969	1970	1971	1972
Britain	3.6	2.6	4.6	5.2	6.5	9.7	6.9
France	2.8	2.8	4.4	6.5	5.3	5.5	6.2
Germany	3.4	1.4	2.9	1.9	3.4	5.3	5.5
Italy	2.1	2.1	1.2	2.8	5.1	5.2	5.3

**Source:** Organization for Economic Cooperation and Development. *Main Economic Indicators: Historical Statistics, 1964–1983*. Paris: OECD, 1984. Figures are percentage increases in each year's average consumer price index over that of the previous year.



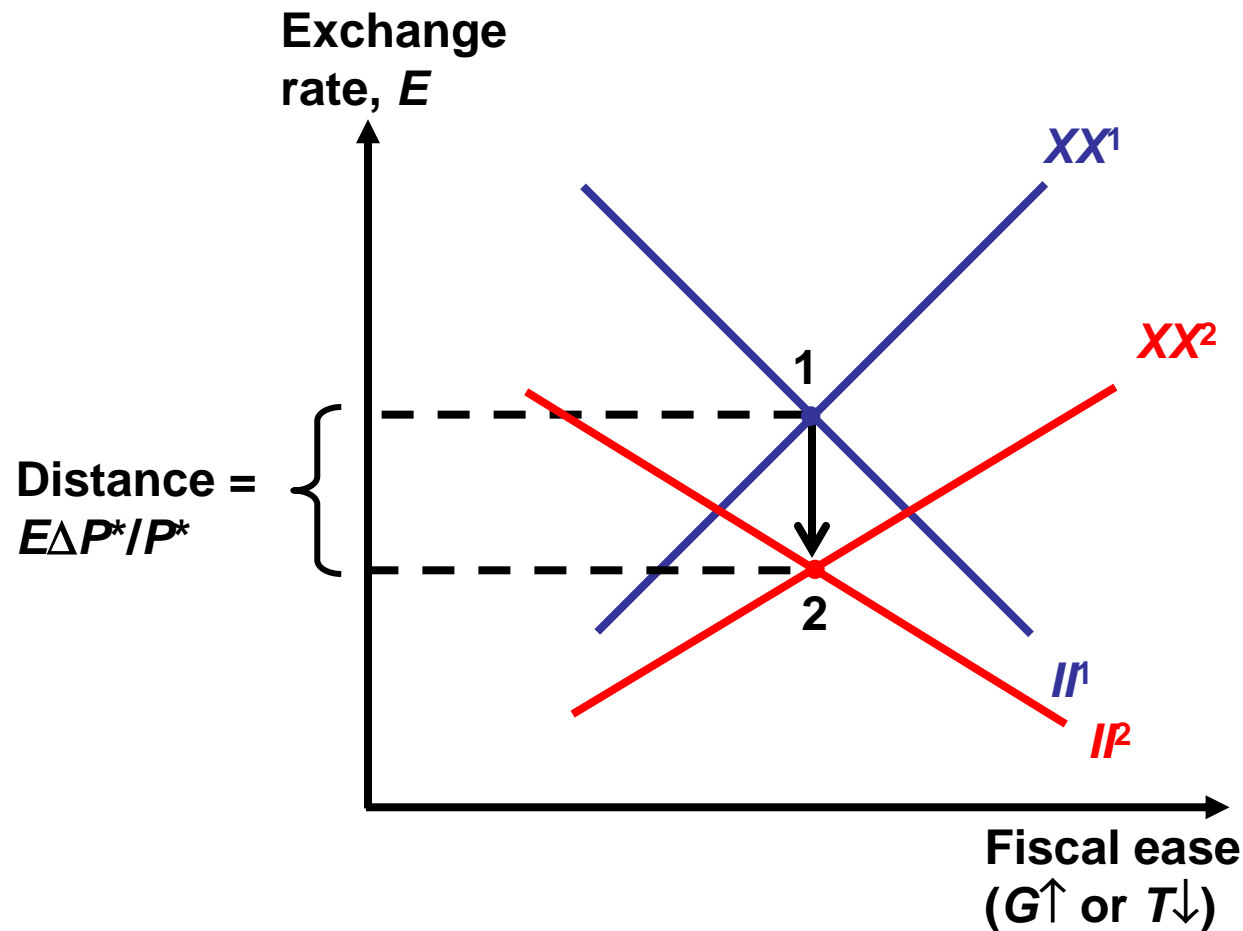
## Inflation rates in European economies relative to that in the US



# Worldwide Inflation and the Transition to Floating Rates



**Figure 20-6:** Effect on Internal and External Balance of a Rise in the Foreign Price Level,  $P^*$





# Worldwide Inflation and the Transition to Floating Rates



**Table 20-2:** Changes in Germany's Money Supply and International Reserves, 1968-1972 (percent per year)

<b>Growth rate of</b>	<b>1968</b>	<b>1969</b>	<b>1970</b>	<b>1971</b>	<b>1972</b>
Money supply	6.4	-6.3	8.9	12.3	14.7
Official international reserves	37.8	-43.6	215.7	36.1	35.8

**Source:** Organization for Economic Cooperation and Development. *Main Economic Indicators: Historical Statistics, 1964-1983*. Paris: OECD, 1984. Figures are percentage increases in each year's end-of-year money supply or international reserves over the level at the end of the previous year. Official reserves are measured net of gold holdings.

# Summary

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1. Internal balance means that an economy enjoys normal output and employment and price stability.
2. External balance roughly means a constant level of official international reserves or a current account that is not too positive or too negative.
3. The gold standard had two mechanism that helped to prevent external imbalances
  - Price specie flow mechanism: the automatic adjustment of prices as gold flows into or out of a country.
  - Rules of the game: buying or selling of domestic assets by central banks to influence financial capital flows.

## Summary (cont.)

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4. The Bretton Woods agreement in 1944 established fixed exchange rates, using the US dollar as the reserve currency.
5. The IMF was also established to provide countries with financing for balance of payments deficits and to judge if changes in fixed rates were necessary.
6. Under the Bretton Woods system, fiscal policies were used to achieve internal and external balance, but they could not do both simultaneously, often leading to external imbalances.

## Summary (cont.)

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7. Internal and external imbalances of the US—caused by rapid growth in government purchases and the money supply—and speculation about the value of the US dollar in terms of gold and other currencies ultimately broke the Bretton Woods system.
8. High inflation from US macroeconomic policies was transferred to other countries late in the Bretton Woods system.